REMARKS/ARGUMENTS

Claims 1-4, 6, 8-14 and 16-17 are pending in the application and stand rejected.

Claims 12 and 16 are rejected under 35 U.S.C. 103 as being unpatentable over U.S. PG-Pub 2002/0103921 to Nair et al. (hereinafter "Nair") in view of United States Patent 6,611,522 to Zheng et al. (hereinafter "Zheng").

Claims 1-3, and 17 are rejected under 35 U.S.C. 103 as being unpatentable over Nair in view of Zheng and further in view of United States Patent 6,597,689 to Chiu et al. (hereinafter "Chiu").

Claims 6, 8 and 11 are rejected under 35 U.S.C. 103 as being unpatentable over United States Patent 7,065,072 to Quiles et al. (hereinafter "Quiles") in view of Nair, and further in view of Zheng, and further in view of Chiu.

Claim 4 is rejected under 35 U.S.C. 103 as being unpatentable over Nair in view of Zheng, and further in view of Chiu, and further in view of U.S. PG-Pub 2001/0037435 to Van Doren.

Claims 9-10 are rejected under 35 U.S.C. 103 as being unpatentable over Quiles in view of Nair, and further in view of Zheng, and further in view of Chiu, and further in view of Van Doren.

Claims 13-14 are rejected under 35 U.S.C. 103 as being unpatentable over Nair in view of Zheng, and further in view of Van Doren.

Claims 1, 6, and 12 are amended without adding new matter.

As discussed below, Applicants respectfully submit that the cited references, whether taken alone or in combination, fail to disclose each and every element as set forth in the claims. Reconsideration and allowance of all claims in view of the following remarks is respectfully requested.

Rejections under Section 103

A. Claim 12

Claim 12 recites a method for routing packet data over a communication network using a telecommunications device. The method comprises "configuring a first set of two or more data processors in the plurality of data processors for a first logical node in the telecommunications device; configuring a second set of two or more data processors in the plurality of data processors for a second logical node in the telecommunications device; managing routing paths within the first logical node with a first control processor distinct from the first set of data processors; managing routing paths within the second logical node with a second control processor distinct from the second set of data processors." (emphasis added). The method also comprises "routing the data associated with the first network service provider between data processors of the first logical node according to a first mapping of the first control processor...routing the data associated with the second network service provider between data processors of the second logical node according to a second mapping of the second control processor." Applicants respectfully submit that the cited references do not disclose or fairly suggest at least first and second logical nodes as claimed.

The Office Action rejects claim 12 by arguing that Nair discloses logical nodes through a collection of line cards and that the line cards are controlled by distributed service routers (DSRs). See, Office Action at ¶8 ("each logical node is a few line cards associated with a service provider, each logical node controlled by a DSR router."). However, the Office Action concedes that Nair fails to disclose that the DSRs manage routing paths *within* a collection of line cards. Id. Applicants respectfully traverse the claim rejection.

As an initial matter, Nair does not disclose logical nodes as set forth in the claim. Instead, Nair describes that "Traffic over any of the plurality of ports (and/or channels) can be freely assigned to any one of the DSRs for routing, and to a corresponding one of the line cards for forwarding." See, Nair at [0028] (emphasis added). Thus, as disclosed in the reference, traffic from the DSRs is assigned to *one line card* for forwarding. There is no teaching or suggestion of 'logical nodes' defined as including two or more data processors or that a distinct

control processor is associated with the logical nodes and manages routing paths within its associated logical node.

In addition, Nair does not require that routing paths for a first logical node are managed by a first control processor and routing paths for a second logical node are managed by a second control processor distinct from the first control processor. Although Nair does indicate that a carrier can purchase additional line cards and DSRs to expand its capacity, the reference describes that DSRs are shared by different service providers. See, Nair at [0031] ("DSRs can be completely isolated from one another, so that, for example, various service providers can share the different DSRs, and the failure of one DSR does not cause the failure of the others." (emphasis added)).

Thus, even if a collection of line cards could be viewed as a logical node, there is no requirement that data for a first service provider is routed within a first logical node and data for a second service provider is routed within a second logical node, where the first and second logical nodes are associated with distinct control processors. To the contrary, Nair specifically describes that DSRs are *shared* by the service providers and that, for example, support for a small service provider can be provided by adding a new service to an existing DSR resource. See, Nair at [0032] ("For smaller service providers, the carrier can simply add the new DSR service to an existing DSR card.").

Accordingly, Nair does not disclose configuring first and second logical nodes or managing routing paths within logical nodes as claimed. In particular, Nair does not disclose or even suggest "configuring a first set of two or more data processors in the plurality of data processors for a first logical node in the telecommunications device...managing routing paths within the first logical node with a first control processor distinct from the first set of data processors...routing the data associated with the first network service provider between data processors of the first logical node according to a first mapping of the first control processor." Nair similarly fails to disclose that such limitations also apply to a distinct second logical node within the same telecommunications device.

Zheng does not cure Nair's deficiencies. The Office Action cites Zheng as teaching "interconnect module cards" which facilitate communication between line cards. See,

Office Action at ¶8 (citing Zheng at col. 9, line 66 – col. 10, line 5.). However, in the cited passage, Zheng does not disclose or in any way suggest that the interconnect module cards are associated with specific groupings of line cards. Nor does Zheng disclose or suggest that the interconnect module cards manage routing paths within a defined group of line cards. In fact, in the cited material, Zheng does not even disclose that the telecommunications device is partitioned into logical nodes. Thus, whether taken alone or in combination, Applicants respectfully submit that the cited references do not disclose or fairly suggest each and every element as claimed.

B. Claim 1

Claim 1 recites limitations similar to those discussed in connection with claim 12 and is believed allowable over the combination of Nair and Zheng for at least the reasons previously given. In particular, claim 1 recites "a plurality of control processors, each control processor configured to manage data routing paths between data processors in the plurality of data processors according to the corresponding physical locations of the data processors in the telecommunications device; and a plurality of logical nodes, wherein each logical node includes two or more data processors in the telecommunications device and is associated with a control processor in the plurality of control processors such that each control processor is coupled to a first data processor of its associated logical node and manages data routing paths within the logical node in relation to said first data processor."

As discussed, Nair in view of Zheng does not disclose or suggest logical nodes which have two or more data processors and which are associated with distinct control processors, or that control processors manage data routing paths between the data processors of a logical node. Chiu does not cure these deficiencies. As cited in the Office Action, Chiu describes a fanout capability from a telecommunications backbone port to many line cards. See, Office Action at ¶11 (citing Chiu at col. 26, lines 27-56). However, in the cited passage, Chiu does not disclose logical nodes or that an associated control processor manages data routing paths between data processors within a logical node. Accordingly, the extended combination does not disclose or fairly suggest each and every element as set forth in claim 1.

C. Claim 6

Claim 6 recites a telecommunications shelf for sending packet data to destinations on a communications network. The shelf comprises "a first logical shelf including a first set of two or more data processors...a second logical shelf including a second set of two or more data processors...a first control processor separate from the first set of data processors configured to manage data routing paths between data processors of the first set according to their corresponding positions in the first logical shelf, and a second control processor separate from the second set of data processors configured to manage data routing paths between data processors of the second set according to their corresponding positions in the second logical shelf." The cited references do not disclose or suggest at least these limitations.

Unlike the claimed invention, Quiles does not disclose logical shelves having sets of two or more data processors within which data is routed through a telecommunications device. And, as acknowledged in the Office Action, Quiles does not disclose that first and second control processors manage data routing paths between the data processors of their respective logical shelves. See, Office Action at ¶16 (page 9).

As disclosed in the reference, data from a home 14 travels over one of lines 48 to a digital subscriber line access multiplexer (DSLAM) 44. DSLAM 44 multiplexes the data onto communication line 38 by which it is conveyed to IP network 18. See, Quiles at col. 3, lines 55-61. Quiles does not in any way suggest that two or more line cards 87 within a DSLAM 44 are organized into a logical shelf, or that traffic is routed between the lines cards which form a logical shelf.

Instead, Quiles specifically states that "Network interface 66 receives data from network 18 over line 38 and communicates it to a particular line card 87 associated with the intended destination of the data." See, Quiles at col. 4, lines 41-43 (emphasis added). Thus, as described in the reference, there is a one-to-one correspondence between network interface 66 and a destination line card 87. There is also a one-to-one correspondence between line cards 87 and the lines 48 by which DSLAM 44 is coupled to home 14. Thus, Quiles does not teach or suggest logical nodes or routing data between the data processors of a logical node as claimed.

As was discussed in connection with claim 1, the extended combination of Nair in view of Zheng and further in view of Chiu fails to disclose or suggest the claimed logical shelves or their corresponding control processors. Accordingly, the four-way combination also fails to disclose each and every element as set forth in the claimed invention. Applicants respectfully request reconsideration and allowance of claims 1, 6, and 12.

D. Claims 2-4, 17; 8-11; and 13-14, 16

Claims 2-4 and 17 depend from claim 1. Claims 8-11 depend from claim 6. Claims 13-14 and 16 depend from claim 12. Each dependent claim is believed allowable over the cited references for at least the reason that it depends from an allowable base claim in addition to being allowable for its further limitations. In this respect, it is noted that Van Doren does not cure the deficiencies in Nair, Zheng, Chiu, and Quiles or in the combination thereof as previously discussed. Accordingly, reconsideration and allowance of all pending claims is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,

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